

SECTION I—CLAIMS

Amendment to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application. Claims 34-69 and 71-74 are amended herein. Claims 1-33 and 70 are, or remain, canceled herein without prejudice. No new claims are presented. Claims 34-69 and 71-74 remain pending in the application.

Listing of Claims:

1-33. (Cancelled)

34. (Currently amended) A ~~data structure stored in a~~ machine-readable medium encoded with computer executable instructions to represent a data structure for use in routing a packet on a Metropolitan Area Network (“MAN”), wherein the data structure comprises:
~~for use by a first network device in providing a packet to be forwarded to a second network device comprising:~~
~~a first field containing a virtual metropolitan area network (VMAN) type; and~~
a Virtual Metropolitan Area Network (“VMAN”) identifier field to specify ~~a second field containing a VMAN identifier (ID) specifying a VMAN associated with an originating domain for from which the packet; and originated.~~
a VMAN data type field comprising information to interpret the contents of the VMAN identifier field.
35. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 34, wherein the VMAN identifier ~~first~~ field and the VMAN data type ~~second~~ field of the data

structure each have a length of two bytes.

36. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 34,

wherein the data structure further comprises:

~~comprising a third field containing a virtual local area network (VLAN) type; and~~

a Virtual Local Area Network (“VLAN”) identifier field to identify ~~a fourth field containing a~~

VLAN ID to identify ~~identifying a VLAN from which the packet originated; and~~

a VLAN data type field comprising information to interpret the contents of the VLAN identifier field.

37. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 36,

wherein the VLAN identifier ~~third~~ field and the VLAN data type ~~fourth~~ field each have a length of two bytes.

38. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 36,

wherein the data structure further comprises:

~~comprising a fifth field containing a media access control (MAC)~~ a Media Access Control

(“MAC”) source address field to specify ~~specifying a host from which the packet originated; and~~

~~a sixth field containing a MAC destination address~~ field to specify ~~specifying a destination~~ host

to which the packet will be forwarded.

39. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 38,

wherein the data structure further comprises:

~~comprising a seventh field containing information indicating~~ a packet type and length field to

indicate a packet type and a packet length for the packet. ~~the packet’s type or length.~~

40. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 39,

wherein the data structure further comprises:

~~comprising an eighth~~ a user data field containing user data.

41. (Currently amended) The ~~data structure stored in the~~ machine-readable medium of claim 34, wherein the ~~second field containing a VMAN ID specifying a VMAN associated with~~ originating ~~[[a]] domain for from which the packet originated comprises the second field~~ containing a VMAN ID specifying a VMAN associated with a an originating customer domain for ~~from which the packet originated~~.

42. (Currently amended) An article of manufacture comprising:

a machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure for use by a first network device in providing a packet to be forwarded to a second network device, wherein the data structure comprises: including:

~~a first field containing a virtual metropolitan area network (VMAN) type; and~~

~~a second field containing a VMAN identifier (ID) specifying a VMAN associated with a domain from which the packet originated.~~

a Virtual Metropolitan Area Network (“VMAN”) identifier field to specify a VMAN associated with an originating domain for the packet; and

a VMAN data type field comprising information to interpret the contents of the VMAN identifier field.

43. (Currently amended) The article of manufacture of claim 42, wherein the ~~machine-accessible medium including content that when accessed by a machine causes the machine to~~ construct a data structure comprises machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure further

comprises:

~~including a third field containing a virtual local area network (VLAN) type and a fourth field~~

~~containing a VLAN ID identifying a VLAN from which the packet originated.~~

a Virtual Local Area Network (“VLAN”) identifier field to identify a VLAN from which the

packet originated; and

a VLAN data type field comprising information to interpret the contents of the VLAN identifier

field.

44. (Currently amended) The article of manufacture of claim 43, wherein the VMAN identifier

field, the VMAN data type field, the VLAN identifier field, and the VLAN data type field

~~first field, the second field, the third field, and the fourth field~~ each have a length of two bytes.

45. (Currently amended) The article of manufacture of claim 43, wherein the ~~machine-accessible~~

~~medium including content that when accessed by a machine causes the machine to~~

~~construct a data structure comprises machine-accessible medium including content that~~

~~when accessed by a machine causes the machine to construct a data structure~~ further

comprises:

~~including a fifth field containing a media access control (MAC) source address specifying a host~~

~~from which the packet originated and a sixth field containing a MAC destination address~~

~~specifying a host to which the packet will be forwarded.~~

a Media Access Control (“MAC”) source address field to specify a host from which the packet

originated; and

a MAC destination address field to specify a destination host to which the packet will be

forwarded.

46. (Currently amended) The article of manufacture of claim 45, wherein the ~~machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure comprises machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure~~ further comprises:

~~including a seventh field containing information indicating the packet's type or length.~~

a packet type/length field to indicate a packet type and a packet length for the packet.

47. (Currently amended) The article of manufacture of claim 46, wherein the ~~machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure comprises machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure~~ further comprises:

a user data field including an eighth field containing user data.

48. (Previously presented) The article of manufacture of claim 42, wherein the ~~machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure including a second field containing a VMAN ID specifying a VMAN associated with a domain from which the packet originated comprises machine-accessible medium including content that when accessed by a machine causes the machine to construct a data structure including a second field containing a VMAN ID specifying a VMAN associated with a~~ originating domain for the packet comprises an originating customer domain for ~~from which the packet originated.~~

49. (Currently amended) A method comprising:

receiving a data packet at a first switch;

tagging the data packet at the first switch with a Virtual Metropolitan Area Network (“VMAN”)
identifier tag to specify a VMAN associated with an originating domain for the data
packet and a VMAN data type tag comprising information to interpret the contents of the
VMAN identifier tag; and
~~VMAN tag, the VMAN tag including a VMAN type and a VMAN identifier (ID) that specifies~~
~~the VMAN associated with a domain from which the data packet originated; and~~
forwarding the tagged data packet toward[[s]] a second switch.

50. (Currently amended) The method of claim 49, wherein forwarding the tagged data packet
toward the ~~towards~~ a second switch comprises forwarding the tagged data packet ~~towards~~
~~a second switch~~ according to the VMAN identifier tag. ID.

51. (Currently amended) The method of claim 49, wherein the ~~receiving a~~ data packet received at
the [[a]] first switch arrives tagged with a Virtual Local Area Network (“VLAN”)
identifier tag identifying a VLAN from which the data packet originated and a VLAN
data type tag comprising information to interpret the contents of the VLAN identifier tag.
~~comprises receiving at a first switch a tagged data packet that includes a virtual local area~~
~~network (VLAN) type and a VLAN ID specifying the VLAN from which the data packet~~
~~originated.~~

52. (Currently amended) The method of claim 51, wherein forwarding the tagged data packet
toward the ~~towards~~ a second switch comprises forwarding the tagged data packet ~~towards~~
~~a second switch~~ according to the VMAN identifier tag and further according to ID and
the VLAN identifier tag. ID.

53. (Currently amended) The method of claim 49, wherein forwarding the tagged data packet
toward the ~~towards~~ a second switch comprises forwarding the tagged data packet ~~towards~~

~~a second switch~~ according to the VMAN identifier tag and further according to ID and a Media Access Control (MAC) destination address tag within the tagged data packet.

54. (Currently amended) The method of claim 49, wherein the data packet received at the first switch is an Institute of Electrical and Electronics Engineers (IEEE) 802.1Q compatible tagged frame.

55. (Currently amended) The method of claim 49, wherein the tagged data packet forwarded toward the second switch has a length equal to four bytes greater ~~more~~ than the length of the data packet received at the first switch.

56. (Currently amended) The method of claim 49, wherein the originating domain for the tagged data packet comprises an originating customer domain for the tagged data packet.

~~tagging the data packet with a VMAN tag that includes a VMAN ID that specifies the VMAN associated with a domain from which the data packet originated comprises tagging the data packet with a VMAN tag that includes a VMAN ID that specifies the VMAN associated with a customer domain from which the data packet originated.~~

57. (Currently amended) A switch ~~An apparatus~~ comprising:

means for receiving data packets at the switch;

means for a first switch to tagging each data packet with a Virtual Metropolitan Area Network (“VMAN”) identifier tag to specify a VMAN associated with an originating domain for the data packet;

means for tagging each data packet with a VMAN data type tag comprising information to interpret the contents of the VMAN identifier tag; and a VMAN identifier (ID) and to

means for forwarding each the tagged data packet toward[[s]] a second switch.

58. (Currently amended) The switch ~~apparatus~~ of claim 57, wherein the data packets received at

the ~~first~~ switch are Institute of Electrical and Electronics Engineers (IEEE) 802.1Q compatible tagged frames.

59. (Currently amended) The switch apparatus of claim 57, wherein ~~the first switch to forwarding each the data packet toward~~[[s]] a second switch comprises ~~the first switch to forwarding each the data packet towards a second switch~~ according to the VMAN identifier tag. ~~ID~~.

60. (Currently amended) The switch apparatus of claim 57, wherein each the data packet[[s]] received at the ~~first~~ switch arrives tagged with a Virtual Local Area Network ("VLAN") identifier tag identifying a VLAN from which the data packet originated and a VLAN data type tag comprising information to interpret the contents of the VLAN identifier tag. ~~are tagged data packets that each have a virtual local area network (VLAN) ID that specifies the VLAN from which the data packet originated.~~

61. (Currently amended) The switch apparatus of claim 60, wherein ~~the first switch to forwarding each the data packet toward the~~ ~~towards a second~~ switch comprises ~~the first switch to forwarding each the data packet towards a second switch~~ according to the VLAN identifier tag and further according to ~~ID and~~ the VMAN identifier tag. ~~ID~~.

62. (Currently amended) The switch apparatus of claim 60, wherein ~~a field containing~~ the VLAN identifier tag of each data packet received [[ID]] has a length of two bytes.

63. (Currently amended) The switch apparatus of claim 57, wherein each tagged data packet has a length four bytes more than the length of the data packet received, ~~at the first switch~~.

64. (Currently amended) A method comprising:

receiving an encapsulated data packet at a first switch, the encapsulated data packet including a header ~~that specifies~~ comprising a Virtual Metropolitan Area Network ("VMAN")

identifier field to specify a VMAN associated with an originating domain for the encapsulated data packet and further comprising a VMAN data type field with information to interpret the contents of the VMAN identifier field; a VMAN type and a VMAN identifier (ID) identifying the VMAN from which the data packet originated; stripping removing the header from the encapsulated data packet at the first switch; and forwarding the stripped data packet toward a second switch.

65. (Currently amended) The method of claim 64, wherein the header of the receiving an encapsulated data packet further comprises: at the first switch comprises receiving at the first switch an encapsulated data packet that includes a virtual local area network (VLAN) tag specifying a VLAN type and a VLAN ID identifying the VLAN from which the data packet originated.

a Virtual Local Area Network (“VLAN”) identifier field to identify a VLAN from which the encapsulated data packet originated; and a VLAN data type field comprising information to interpret the contents of the VLAN identifier field.

66. (Currently amended) The method of claim 65, wherein forwarding the stripped data packet comprises:

forwarding the stripped data packet based on according to the VLAN identifier field and based further on ID and the VMAN identifier field. ID.

67. (Currently amended) The method of claim 65, wherein the VMAN identifier field, the VMAN data type field, the VLAN identifier field, and the VLAN data type field each have a field that contains the VMAN type, VMAN ID, VLAN type, or VLAN ID has a length of two bytes.

68. (Currently amended) The method of claim 64, wherein the originating domain for the encapsulated data packet comprises an originating customer domain for the encapsulated data packet.

~~receiving an encapsulated data packet at the first switch that includes a header that specifies a VMAN type and a VMAN ID identifying the VMAN from which the data packet originated comprises receiving an encapsulated data packet at the first switch that includes a header that specifies a VMAN type and a VMAN ID identifying the VMAN associated with a customer domain from which the data packet originated.~~

69. (Currently amended) A switch ~~An apparatus~~ comprising:

means for receiving tagged data packets ~~a first switch to receive~~ from a second switch, the

tagged data packets each tagged with a Virtual Metropolitan Area Network (“VMAN”) identifier tag to specify a VMAN associated with an originating domain for each tagged data packet and a VMAN data type tag comprising information to interpret the contents of the VMAN identifier tag;

means for stripping the VMAN identifier tag and the VMAN data type ~~data packets that are each tagged with a VMAN tag, to remove the VMAN tag from each tagged data packet;~~ and means for ,and to forwarding each stripped data packet.

70. (Canceled).

71. (Currently amended) The switch ~~apparatus~~ of claim 69, wherein the originating domain for the tagged data packet comprises an originating ~~the VMAN tag includes a VMAN type and a VMAN ID identifying the VMAN associated with a customer domain for from which the tagged data packet originated.~~

72. (Currently amended) The switch ~~apparatus~~ of claim 70, wherein the VMAN identifier tag and

the VMAN data type tag of each received tagged data packet each have a field that contains the VMAN type or VMAN ID has a length of two bytes.

73. (Currently amended) The switch apparatus of claim 70, wherein each tagged data packet arrive further comprising a Virtual Local Area Network (“VLAN”) identifier tag identifying a VLAN from which the tagged data packet originated and a VLAN data type tag comprising information to interpret the contents of the VLAN identifier tag. received at the first switch is also tagged with a virtual local area network (VLAN) ID that specifies the VLAN from which the data packet originated.
74. (Currently amended) The switch apparatus of claim 73, wherein ~~the first switch to~~ forwarding each stripped data packet comprises the first switch to forwarding each stripped data packet according to the VLAN identifier tag and further according to ID and the VMAN identifier tag. ID.